

Listing of the Claims:

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1 1 (Currently amended). A surface treatment apparatus comprising:
2 a sheet heating unit which heats a sheet comprising having at least
3 a base, a thermoplastic resin layer disposed on the base, and an image
4 recording layer disposed on the thermoplastic resin layer base;
5 a contact member for transferring a surface quality thereof to a
6 surface of the image recording layer and an interface of the thermoplastic
7 resin layer facing the image recording layer of the sheet; and
8 a sheet cooling unit which cools the sheet while in contact with the
9 contact member.

1 2 (Original). A surface treatment apparatus according to Claim 1, wherein
2 the apparatus comprises:

3 a plurality of contact members having different surface qualities;
4 and
5 a contact member selecting unit which selects a contact member
6 having a desired surface quality from the plurality of contact members
7 having different surface qualities.

1 3 (Original). A surface treatment apparatus according to Claim 2, wherein
2 the contact member is a member selected from a roller, an endless belt, and
3 a texture sheet.

1 4 (Original). A surface treatment apparatus according to Claim 2, wherein
2 a surface quality of the contact member is varied so that one of a gloss
3 treatment, a matt treatment, and an embossed treatment is given to the
4 sheet.

1 5 (Currently amended). A surface treatment apparatus according to Claim

2 2, further comprising a user information providing unit for providing user
3 information containing the contact member surface quality data.

1 6 (Original). A surface treatment apparatus according to Claim 5, wherein,
2 in the contact member selecting unit, a desired surface quality is selected
3 based on user information provided by the user information providing unit.

1 7 (Withdrawn). A surface treatment apparatus according to Claim 1,
2 further comprising a treatment control unit which controls treatment
3 conditions of at least one of the sheet heating unit and the sheet cooling
4 unit.

1 8 (Withdrawn). A surface treatment apparatus according to Claim 7,
2 wherein the treatment control unit comprises:
3 a magazine ID identification unit which identifies a magazine ID of a
4 magazine housing the sheet; and
5 a treatment conditions selecting unit which selects a treatment condition
6 corresponding to the magazine ID identified by the magazine ID
7 identification unit.

1 9 (Withdrawn). A surface treatment apparatus according to Claim 8,
2 wherein the treatment condition selecting unit selects treatment conditions
3 from among plural treatment modes comprising at least one selected from
4 a heating temperature in the sheet heating unit, a pressure force, a heating
5 time, and a pressurizing time, a cooling temperature in the sheet cooling
6 unit, and a cooling time.

1 10 (Withdrawn). A surface treatment apparatus according to Claim 9,
2 wherein the magazine ID is assigned for each sheet type.

1 11 (Withdrawn). A surface treatment apparatus according to Claim 7,
2 wherein the treatment control unit comprises an operation screen display

3 unit which displays a screen permitting selection of treatment conditions.

1 12 (Withdrawn). A surface treatment apparatus according to Claim 11,
2 wherein the operation screen display unit displays a screen which permits
3 selection of a quality comprising at least one of gloss and matt as the
4 quality after surface treatment of the sheet.

1 13 (Withdrawn). A surface treatment apparatus according to Claim 11,
2 wherein the operation screen display unit displays a screen which permits
3 selection of a sheet type.

1 14 (Withdrawn). A surface treatment apparatus according to Claim 1,
2 wherein the sheet heating unit heats the sheet in contact with the contact
3 member.

1 15 (Withdrawn). A surface treatment apparatus according to Claim 14,
2 wherein the sheet heating unit heats to a temperature equal to or higher
3 than the softening point of a thermoplastic resin in the thermoplastic resin
4 layer.

1 16 (Withdrawn). A surface treatment apparatus according to Claim 15,
2 wherein the sheet heating unit heats the sheet to a temperature of from
3 80 °C to 120 °C.

1 17 (Withdrawn). A surface treatment apparatus according to Claim 15,
2 wherein the contact member pressures the sheet to a pressure of from
3 7 kgf/cm² to 20 kgf/cm².

1 18 (Withdrawn). A surface treatment apparatus according to Claim 15,
2 wherein the sheet cooling unit cools to a temperature less than the
3 softening point of a thermoplastic resin in the thermoplastic resin layer.

1 19 (Withdrawn). A surface treatment apparatus according to Claim 15,
2 wherein the sheet heating unit comprises:

3 the endless belt; and

4 a pair of heat rollers disposed so as to place the endless belt in
5 pressure contact from its inner side and outer side.

1 20 (Withdrawn). A surface treatment apparatus according to Claim 15,
2 wherein the sheet cooling unit is disposed between the pair of heat rollers
3 and the rotation roller suspending the endless belt free to rotate together
4 with the pair of heat rollers, and in the vicinity of the endless belt.

1 21 (Withdrawn). A surface treatment apparatus according to Claim 20,
2 wherein the treatment control unit adjusts a cooling time due to the sheet
3 cooling unit by varying a distance between the pair of heat rollers and the
4 rotation roller, so as to vary the time for which the sheet and endless belt
5 are in contact.

1 22 (Withdrawn). A surface treatment apparatus according to Claim 21,
2 wherein the distance between the pair of heat rollers is varied by displacing
3 the rotation roller and a suspension roller which suspends the endless belt
4 free to rotate together with the rotation roller.

1 23 (Withdrawn). A surface treatment apparatus according to Claim 20,
2 wherein the sheet cooling unit cools the sheet by blowing cold air.

1 24 (Withdrawn). A surface treatment apparatus according to Claim 20,
2 wherein the treatment control unit adjusts a cooling temperature due to the
3 sheet cooling unit by varying a blowing rate of the cold air produced by the
4 sheet cooling unit.

1 25 (Withdrawn). A surface treatment apparatus according to Claim 15,
2 wherein the sheet heating unit comprises:

3 an inner heat roller disposed inside the endless belt which suspends
4 the endless belt together with a rotation roller disposed on the inner side of
5 the endless belt so that the belt is free to rotate; and

6 an outer heat roller disposed outside the endless belt which grips
7 the endless belt together with the inner heat roller so that the belt is free to
8 rotate.

1 26 (Withdrawn). A surface treatment apparatus according to Claim 1,
2 wherein the sheet heating unit comprises a sheet preheating part which
3 preheats the sheet and the apparatus transfers a surface quality of the
4 contact member to the sheet heated by the sheet preheating part.

1 27 (Withdrawn). A surface treatment apparatus according to Claim 26,
2 wherein the sheet preheating part heats the sheet while the sheet treatment
3 surface is in contact with the endless belt.

1 28 (Withdrawn). A surface treatment apparatus according to Claim 27,
2 wherein the sheet preheating part is disposed on the roller surface of the
3 inner heat roller via the endless belt.

1 29 (Withdrawn). A surface treatment apparatus according to Claim 27,
2 wherein the sheet preheating part is disposed on the rotating endless belt,
3 and further upstream than the inner heat roller and the outer heat roller.

1 30 (Withdrawn). A surface treatment apparatus according to Claim 27,
2 wherein the sheet preheating part comprises a transport unit which
3 transports the sheet while in contact with the endless belt.

1 31 (Withdrawn). A surface treatment apparatus according to Claim 30,
2 wherein the transport unit comprises a heating mechanism.

1 32 (Withdrawn). A surface treatment apparatus according to Claim 31,
2 wherein the transport unit comprises:

3 a contact belt which brings the sheet into contact with the endless
4 belt; and

5 rotation rollers disposed on an inner side of the contact belt which
6 suspend the belt such that it is free to rotate.

1 33 (Withdrawn). A surface treatment apparatus according to Claim 32,
2 wherein one of the rotation rollers is the outer heat roller.

1 34 (Withdrawn). An image recording apparatus comprising:
2 an image recording unit which forms an image on a sheet; and
3 a surface treatment unit which performs surface treatment on the sheet,
4 wherein the surface treatment unit is a surface treatment apparatus
5 comprising:

6 a sheet heating unit which heats a sheet having at least a base, a
7 thermoplastic resin layer, and an image recording layer on the base;

8 a contact member; and

9 a sheet cooling unit which cools the sheet while in contact with the
10 contact member,

11 wherein the apparatus transfers a surface quality of the contact
12 member to a surface of the image recording layer and an interface of the
13 thermoplastic resin layer facing the image recording layer of the sheet.

1 35 (Withdrawn). An image recording apparatus according to Claim 34,
2 wherein the image recording unit records the image on the sheet
3 whereupon surface treatment has been performed by the surface treatment
4 unit.

1 36 (Withdrawn). An image recording apparatus according to Claim 34,
2 wherein the surface treatment unit performs surface treatment on the sheet
3 whereupon the image has been formed by the image forming unit.